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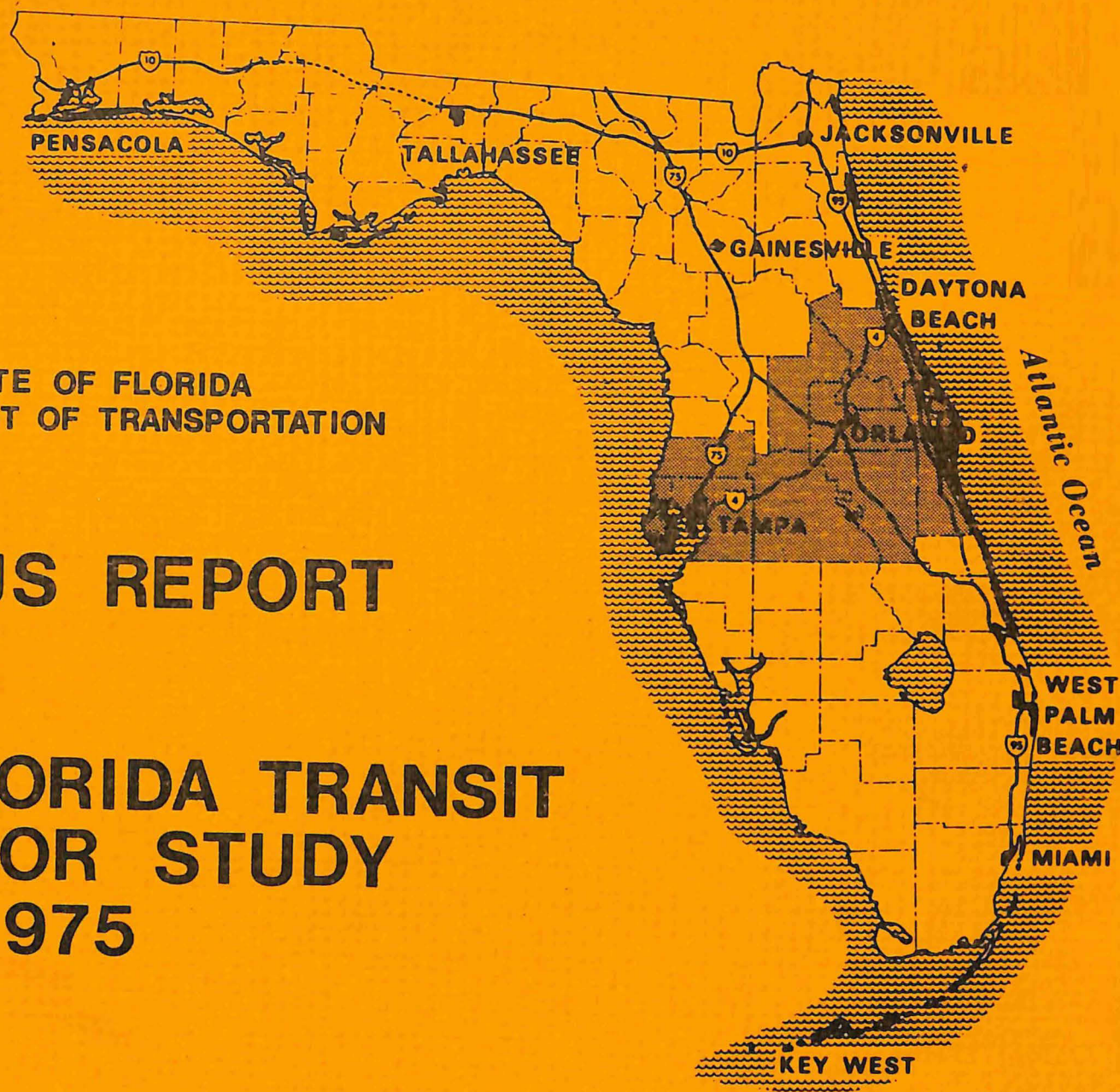
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

STATUS REPORT

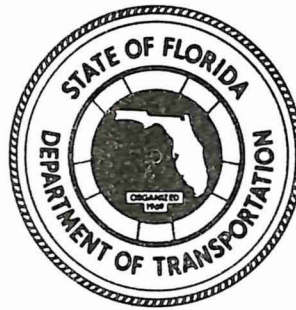
CROSS FLORIDA TRANSIT CORRIDOR STUDY 1975

ALAN M. VOORHEES AND ASSOCIATES, INC.



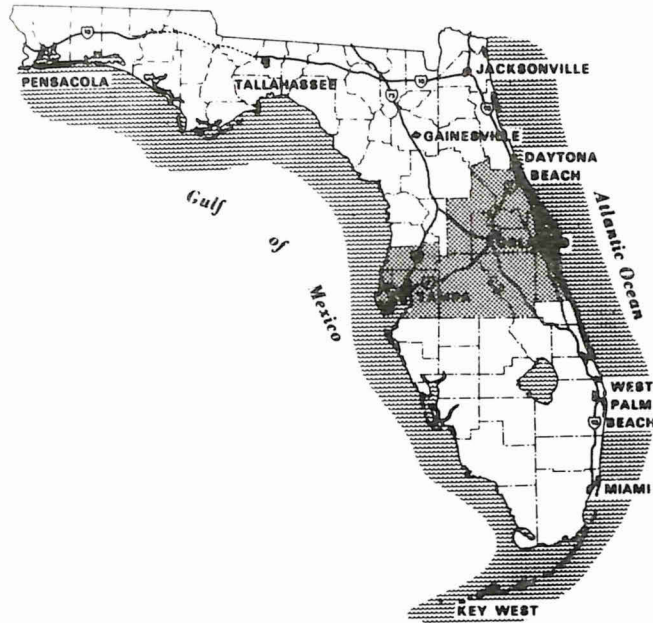
CROSS FLORIDA TRANSIT CORRIDOR STUDY 1975

STATUS REPORT



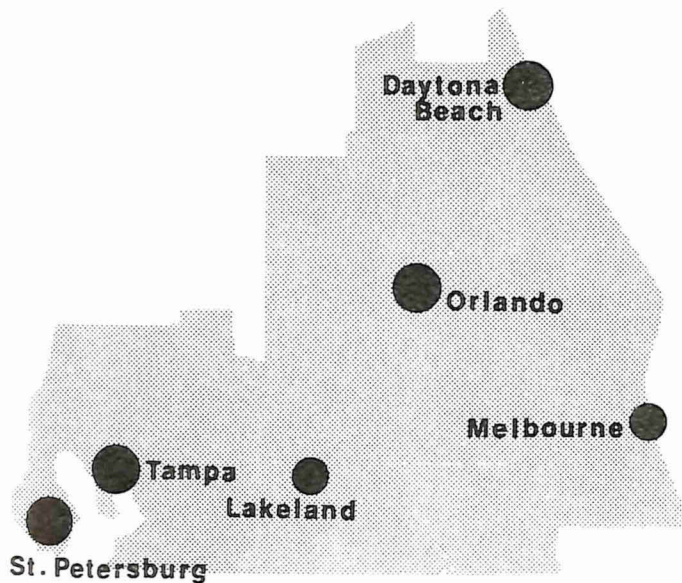
**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
DIVISION OF PLANNING AND PROGRAMMING**

**OCTOBER 1975 ALAN M. VOORHEES AND ASSOCIATES, INC.
ECONOMICS RESEARCH ASSOCIATES, INC.
ENVIRONMENTAL DESIGN GROUP, INC.
KAISER ENGINEERS, INC.**



WHAT IS THE PURPOSE OF THE CROSS FLORIDA TRANSIT CORRIDOR STUDY?

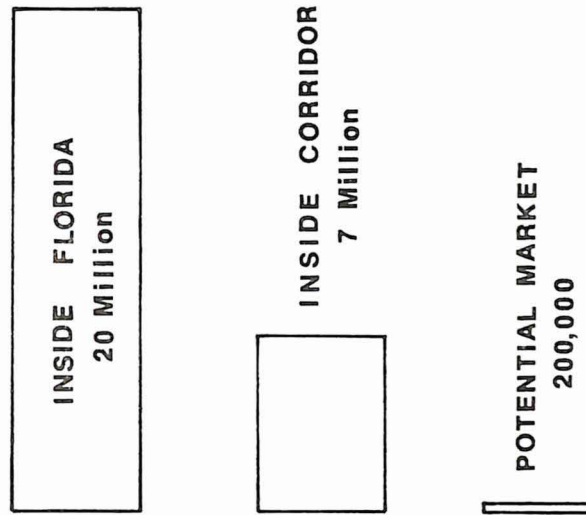
To identify deficiencies in the existing and planned Corridor transportation system and to recommend improvements to be made over the next 25 years.



WHAT IS THE CROSS FLORIDA CORRIDOR ?

The Corridor is made up of ten counties and contains several major urban areas: St. Petersburg, Tampa, Orlando and Daytona Beach. The Corridor is one of the largest concentrations of tourism-related businesses in the nation. Population and employment will continue to grow at greater than the Statewide or national rates.

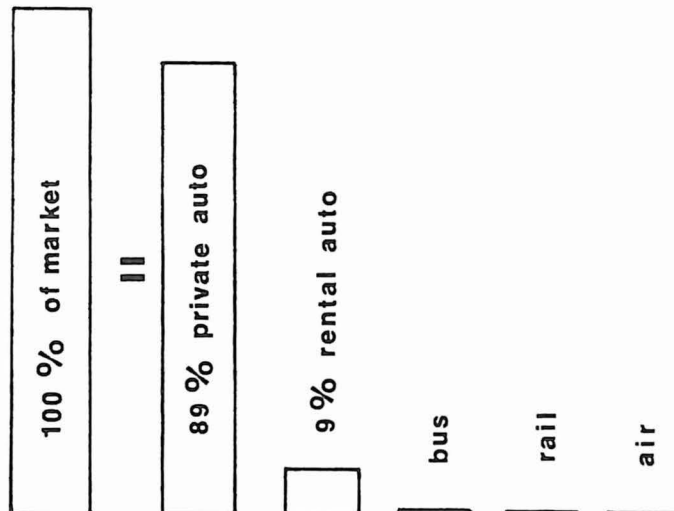
WHAT IS THE POTENTIAL MARKET FOR A CORRIDOR TRANSIT SYSTEM?



At present about 20 million person trips are made in the State of Florida every day. A person trip is one trip made by one person by any mode other than walking. Of these, almost 7 million are made in the Corridor.

The vast majority of the 7 million person trips are made entirely within a single urban area. An additional number are made in rural areas. The remainder are trips between urban areas within the Corridor and can be considered the potential market. The size of the market is quite small: about 200,000 person trips per day. However, the market is growing quickly and by the year 2000 will be about 430,000.

IS TRAVEL ON EXISTING CORRIDOR TRANSPORTATION SYSTEMS WELL-BALANCED?



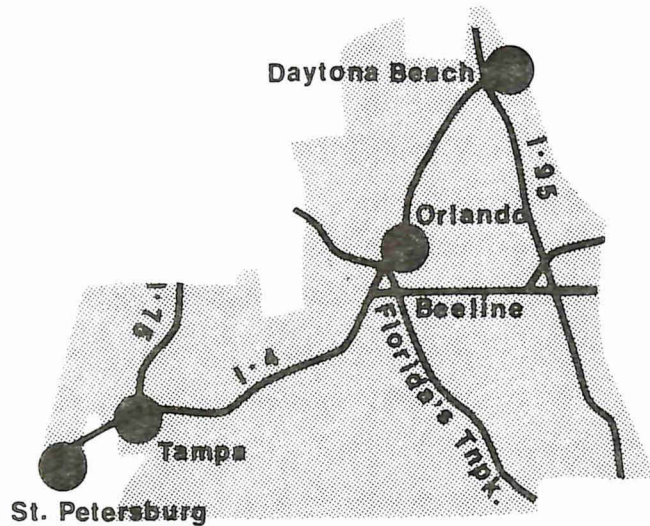
Of the 200,000 daily person trips which make up the potential market, almost all are taken in automobiles (98 percent). 89 percent of all trips are in private autos, 9 percent in rental autos, and the remaining 2 percent is split between bus, rail and air travel.

WHAT FACILITIES AND SERVICES ALREADY EXIST IN THE CORRIDOR?

HIGHWAYS

The highway system in the Cross Florida Corridor is well developed. Major freeways are:

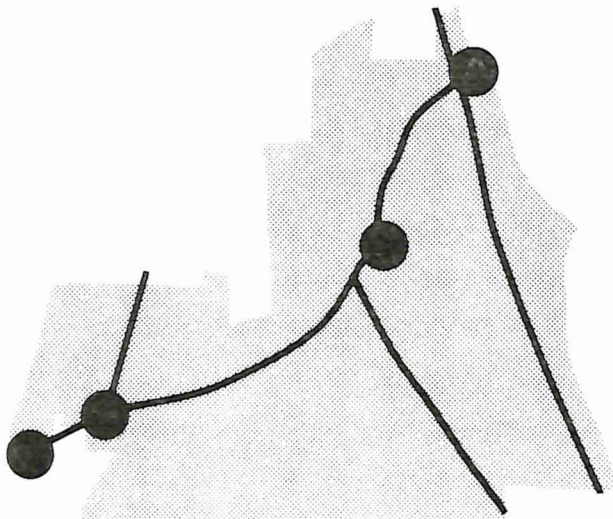
- o I-4, the primary east-west link in the Corridor connecting all major Corridor cities.
- o I-95, along the East Coast, serving long distance north-south movements.
- o Florida's Turnpike, primary access to central and southern Florida from the midwestern states.
- o I-75, primary access to the Tampa Bay region from the Northeast and Midwest.

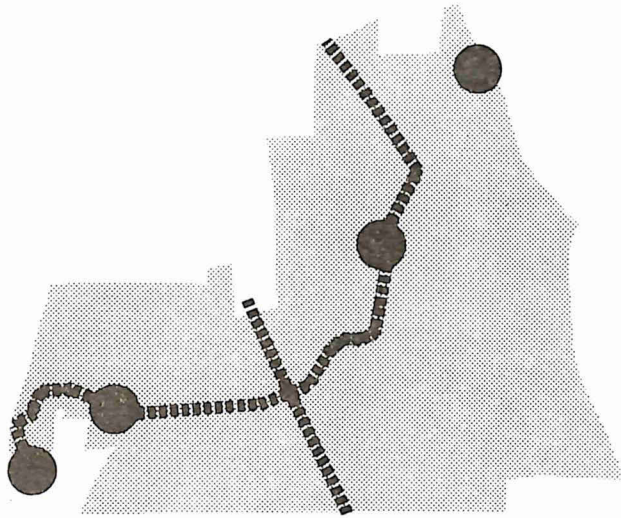


BUS SERVICE

A substantial quantity of bus service is operated in the Corridor. In general, these services are segments of long distance interstate routes between Florida and the northeastern and midwestern states.

Approximately 15 daily round trips are operated the length of the Corridor in an east-west direction, between Daytona and the Tampa Bay area. A limited amount of this east-west service (four daily round trips) is express, stopping at only the four largest urban areas. The remainder of service is local, making 6 or more stops in the Corridor. Shuttle type bus service (15-25 round trips daily) is operated between Tampa and St. Petersburg and between Walt Disney World and Orlando.



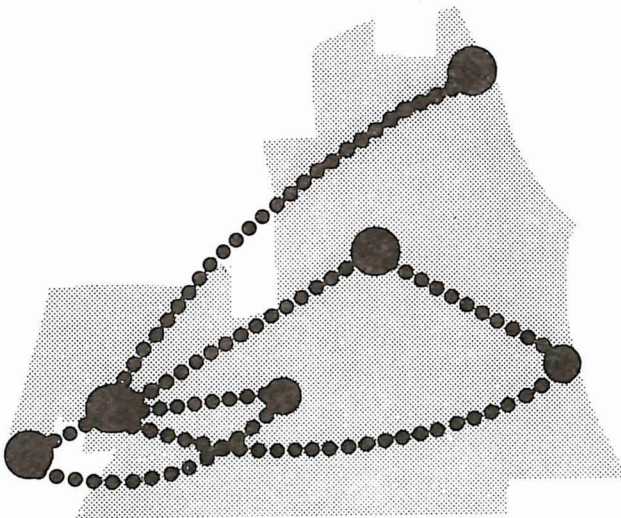


RAIL SERVICE

AMTRAK operates three east-west round trips daily through the Corridor on Seaboard Coast Line tracks. All major urban areas except Daytona Beach are served by this rail service. All rail service in the Corridor is part of long distance service between Florida and New York City or Chicago.

Three daily AMTRAK round trips are operated across the Corridor, stopping at Winter Haven.

The southern terminal of Auto-train is in Sanford. Direct service is operated between Sanford and Lorton, Virginia (near Washington, D.C.) and Sanford and Louisville, Kentucky.



AIR SERVICE

Air service is operated to six cities in the Corridor. The busiest airport is Tampa International, with approximately 180 daily flights. Next in terms of flight activity is Orlando Jetport, with approximately 90 commercial flights daily.

Most intercity flights within the Corridor are segments of long distance interstate routes. Exceptions are generally commuter airline flights.

WHAT ARE THE TRANSPORTATION DEFICIENCIES IN THE CORRIDOR ?

TRAFFIC PROBLEMS

The primary traffic problem in the Corridor is local traffic congestion, concentrated in the major urban areas of Tampa-St. Petersburg and Orlando. These areas currently experience unsatisfactory traffic service on a regular (daily) basis. This local traffic congestion will grow, both in size of areas affected and intensity, through the year 2000. Intercity travel and local travel coincide on the urban sections of I-4 in the Tampa-St. Petersburg and Orlando areas. At such locations, intercity traffic is affected by traffic congestion to the same extent as local travel.

TRANSIT DEFICIENCIES

A variety of transit services, competently operated, are presently available in the Corridor. Despite the quantity of service offered, however, some serious transit deficiencies persist:

- Most transit service is a "tail end" of a long distance trip between the Corridor and the rest of the country. As a result, schedules are not designed for convenience to Cross Florida travel. Further, on-time performance is eroded due to the long distance travel prior to arrival in the Corridor.
- Travel times on all surface modes are poor. Bus travel speeds are impaired by station locations and arterial highway delays; rail speeds by restriction and rail traffic delays.

- Access to terminals for all modes is generally poor. There are some exceptions, particularly at airports. However, even here the access is generally confusing and of low visibility.
- Transit services have a low visibility. Corridor residents are either not aware of transit service in the Corridor, or are aware of but not impressed by available transit service.

Non-residents have no opportunity to become aware of transit service prior to their visit to the Corridor. Consequently, most of this potential source of transit travel demand is effectively removed from the transit market. For the tourist segment of travelers in the Corridor, the existing transit services are not responsive to particular origin-destination needs.

- Despite the fact that transit services are competently operated in the Corridor, they nevertheless suffer from an image as the "poor man's" mode. This image problem arises partly from inherent characteristics of the transit travel market, and also partly from the nature of the existing services offered.

OTHER DEFICIENCIES

The long range view of transit in the Corridor needs strengthening. Intercity transit service is intricately bound up with a variety of other transportation issues, in particular local transit services and highway improvement. A well defined long range transit development program is essential to properly blend transit and other transportation improvements.

Central Florida contains one of the country's greatest concentrations of private investment in tourism facilities. Public investment in infrastructure to serve this type of tourism--parks, highways, airports, etc.--has typically been in scale with the level of this private development. Attention to public transit, on the other hand, has been lacking. The result has been an inadequate response to the needs of many visitors to Central Florida. As the cost of automobile operation continues to rise and as the number of foreign and domestic non-driving tourists increase, the inadequacy of Corridor transit services will become more apparent.

The Corridor is not in a favorable position with respect to future transit funding. Funding of transportation services, at the Federal, State or even private development level, flows most readily where problem areas are clearly identified and reasonable solutions developed. Positioning for funding is also strengthened when planning bears the imprint of as many affected interests as possible, including not only governmental planning agencies, but also the presently underrepresented elements of existing transportation operators and owners of other private properties.

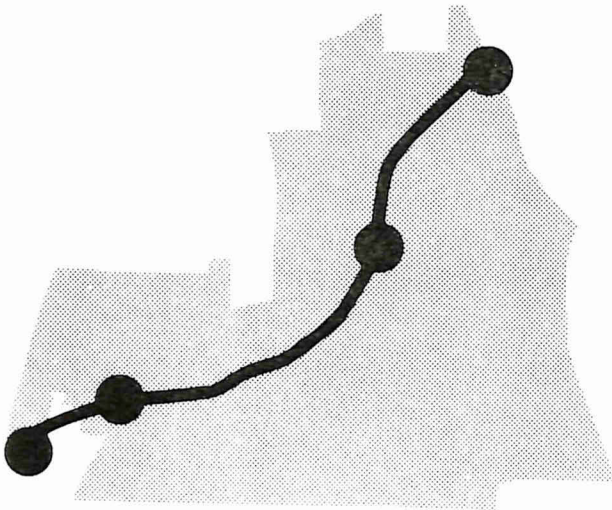
WHAT CAN BE DONE TO IMPROVE CORRIDOR TRANSPORTATION ?

	SHORT RANGE	LOCAL ACCESS	LONG RANGE
Opening Date	Now-1985	1980 Onward	1985-2000
Area Served	All of Corridor	Small Part of Corridor	All of Corridor
Initial Cost	Small, Less than \$200 Million	Less than \$200 Million	Large, More than \$500 Million
Construction	Minor Construction	Possibly Major	Major Construction
Relation to Other Alternatives	First Step in Corridor Transit Development	Necessary Part of Corridor Transit at Any Stage	Ultimate Step in Corridor Transit Development

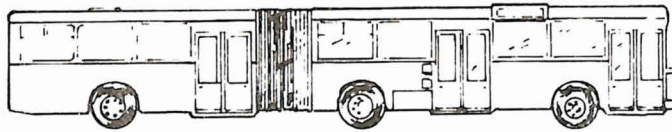
WHAT ARE THE POSSIBLE LONG RANGE ALTERNATIVES?

Long Range Alternatives:

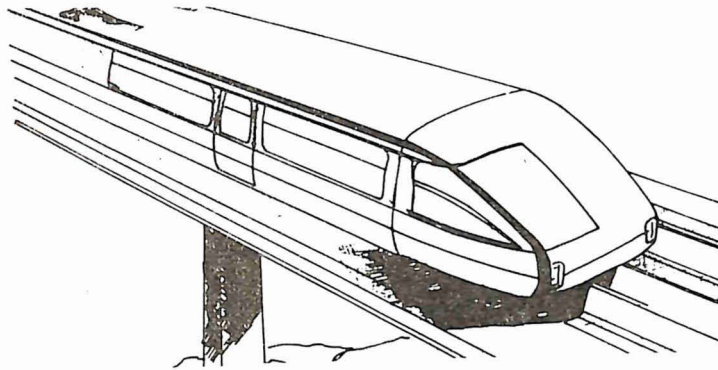
- Are primarily for Corridor-wide movement
- Would not start operating for 15-25 years due to construction and financing
- Involve major construction at high cost
- May require a new agency for operation
- Represent ultimate foreseeable development of Corridor transit
- Employ advanced technology
- Provide a high level of service



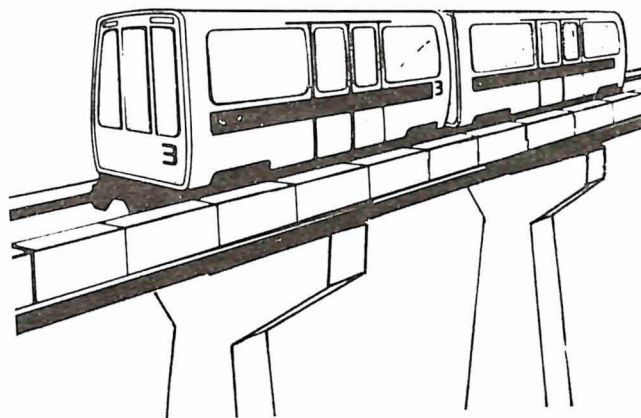
Long Range Alternatives require new track or other fixed guideway throughout the length of the Corridor. These would be on or as close as possible to the existing I-4 right-of-way. Minimal amounts of land would be purchased for right-of-way.



The EXPRESS BUS alternative will operate on an exclusive busway constructed in, or as close as possible to, the I-4 alignment. An exclusive busway is a two lane highway reserved for buses only. The system could use new, innovative bus equipment, possibly of a design not permitted on highways in mixed traffic. Medium speeds, 60-70 miles per hour, would be maintained.



The VERY HIGH SPEED TRACKED alternative represents the ultimate development in ground transportation. It would operate on a new guideway within the I-4 Corridor. It will employ very advanced equipment, possibly of a type currently under development. Possible technologies use wheel-less vehicles suspended above a track by air or magnetism, or very high performance steel-wheel equipment. Very high speeds, in excess of 150 miles per hour, would be maintained.



The DEMAND RESPONSIVE TRACKED alternative would operate on new guideway within the I-4 Corridor. This alternative would employ advanced demand responsive equipment of a design still under development. Equipment would have the capability of flexible operation, adjusting routes and schedules in response to passenger desires. Equipment also has the potential for automated operation, at least over parts of the system. Equipment size is small: 10-20 passengers. Medium speeds from 60 to 80 miles per hour, would be maintained. Higher speeds (100 mph) may be possible.

SHOULD LONG RANGE SYSTEMS BE BUILT NOW?

Long range alternatives are not viable now, because (1) the existing traffic congestion problems are not appropriately solved by intercity transit and (2) large new systems are far from being financially viable.

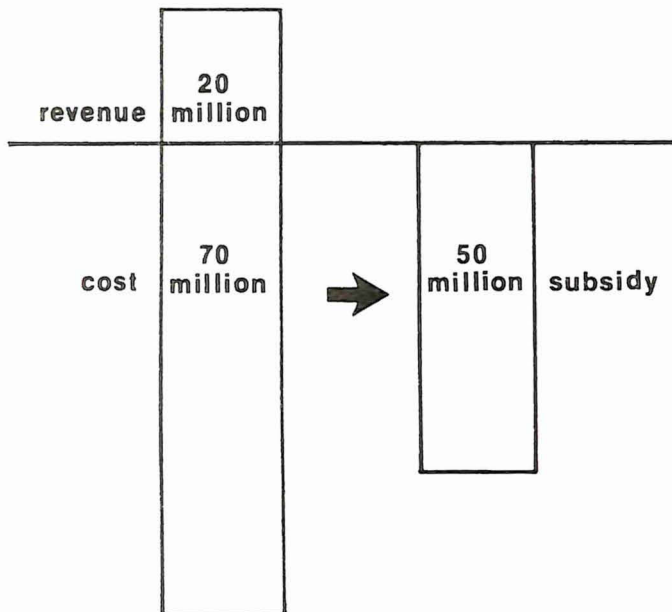
Existing traffic congestion in the Corridor is concentrated in major urban areas. This congestion is primarily an urban transportation problem, caused by local traffic and best solved through locally applied measures. Intercity travel contributes only very slightly to existing congestion. Improvement of intercity travel is not an effective means of reducing existing urban area traffic congestion.

Because they require new construction throughout the length of the Corridor, the long range alternatives are very expensive, ranging from \$600 million to \$1 billion in initial cost (construction and equipment).

The annual cost of operating a long range system and amortizing its cost (in other words, "paying off the mortgage" on the initial cost) is \$50 to \$70 million.

However, at current ridership levels the annual revenue of a long range system would be only \$10 to \$20 million.

Thus, a long range system, if built now, would fail by a very large amount -- \$40 million to \$50 million annually -- to "pay for itself". The difference of \$40-\$50 million would have to be furnished as a subsidy from State, local, Federal or private sources.



It is unlikely that this level of State, local or Federal assistance could be obtained. In the intense competition for such funds, long range intercity transit systems appear to have substantially lower priority than a variety of other competing uses, such as local transit improvements and arterial street upgrading.

COULD THE LONG RANGE SYSTEMS BECOME FEASIBLE BY THE YEAR 2000?

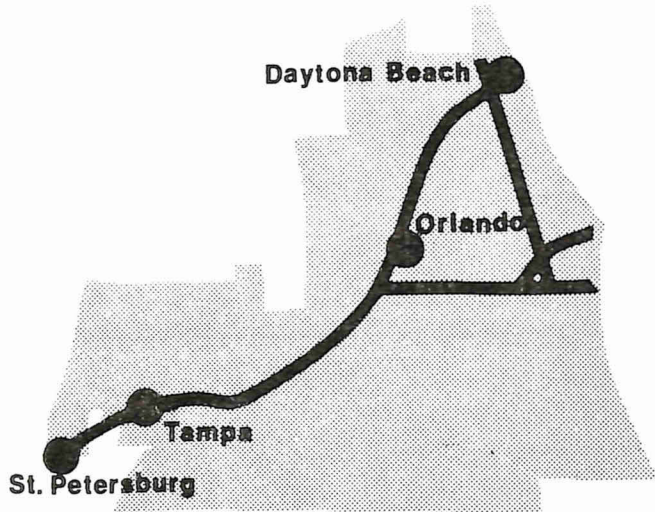
In the more distant future, the outlook for long range alternatives improves. Specifically, (1) Corridor traffic congestion becomes a stronger motive for improved transit service and (2) the systems become more attractive financially.

By the year 2000, traffic congestion problem areas will spread to about 30 percent of the I-4 Corridor. These congestion problems will continue to be primarily urban travel problems, best solved through locally developed measures. However, their impact on intercity traffic will be considerable.

By the year 2000, the financial feasibility of long range systems improves. This is a result of two factors: (1) improved patronage due to the growth of travel in the Corridor and (2) the possibility that local systems would be then be built and available as first stages, thus reducing the additional cost necessary to realize a complete, long range system.

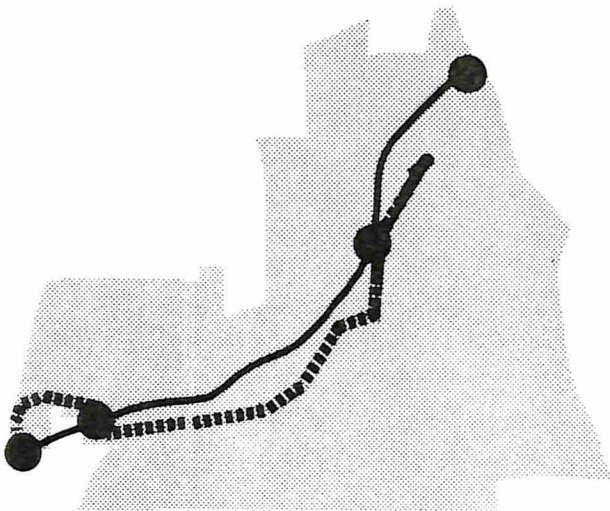
WHAT LOW-COST IMPROVEMENTS CAN BE MADE OVER THE NEXT TEN YEARS?

BUS ON HIGHWAY

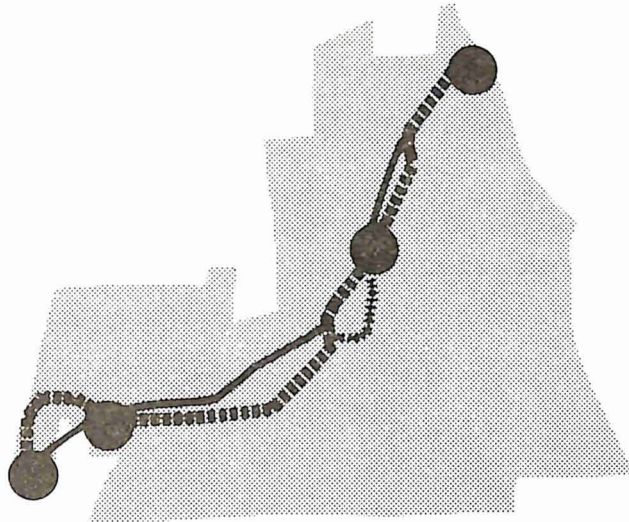


- uses existing highways
- stresses a much improved image with specially designed bus equipment
- cruise speed of 55 mph
- a "many station" concept of service to take advantage of the flexibility of bus routing

IMPROVED EXISTING RAIL

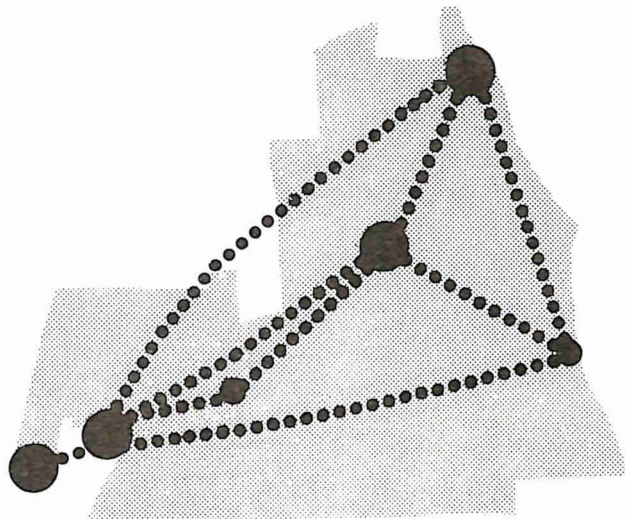


- uses existing Seaboard Coast Line tracks, which are in good condition
- stresses improved image with redesigned conventional equipment or modern turbo-train equipment
- maximum speed of 79 mph
- a "many station" concept of service using new and upgraded stations



HIGHER SPEED RAIL

- where possible, existing SCL tracks would be upgraded to 100 mph speeds
- new track would be constructed along I-4 in the Walt Disney World area and from Sanford to Daytona Beach, to 100 mph standards
- stresses an improved image by using modern turbotrain equipment operating at high speed
- would retain a "many station" concept of service



AIR

- uses conventional turboprop or jet aircraft
- could introduce shuttle-type service between all major airports in the Corridor and eventually some minor ones
- high air speeds and fast ground turnaround times
- a "few station" concept of service, due to the number of available airports

HOW MANY PEOPLE WILL THESE IMPROVEMENTS SERVE?

HOW MUCH WILL THEY COST?

	ANNUAL NUMBER OF PASSENGERS SERVED IN 1985	ANNUAL CAPITAL COSTS	ANNUAL OPERATING COSTS	ANNUAL PROFIT OR (SUBSIDY)
BUS ON HIGHWAY	6,644,000	\$ 1.15m	\$ 6.85m	\$ 6.35m
IMPROVED EXISTING RAIL	2,244,000	\$ 1.8 m	\$ 5.0 m	\$ 3.4 m
HIGHER SPEED RAIL	7,940,000	\$22.0m	\$11.6m	(\$ 9.4 m)
AIR	to be determined			

WHAT ARE SOME OF THE IMPACTS OF THE SHORT RANGE ALTERNATIVES?



ORGANIZATION -- All four improvements can be operated by existing corporations offering comparable service, or by new operators.

ENVIRONMENT -- Except for the Higher Speed Rail, none of the improvements involve major construction and thus would have minimal adverse impact. Almost all of the construction for the Higher Speed Rail would be contained within the I-4 right-of-way, minimizing its impact. Also, pollutants per passenger mile are lower for buses, trains and aircraft than for automobiles.

PASS. MILES PER GALLON OF FUEL

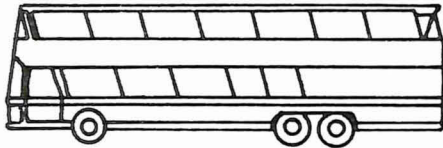
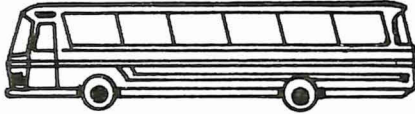


ENERGY -- All surface alternatives use less energy per passenger mile than the automobile. The air alternative uses about 30 percent more fuel for each passenger mile of travel. Rail travel is more efficient than air travel.

RISK -- All four improvements involve minimal risk because most of the investment would be in equipment. If the project were to be terminated, the equipment would be readily salable. Thus, much of the original investment could be recovered.

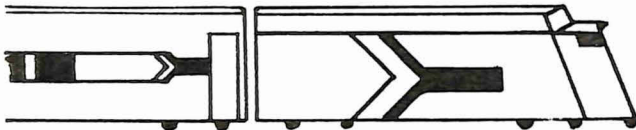
WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF THE SHORT RANGE SYSTEMS?

BUS ON HIGHWAY

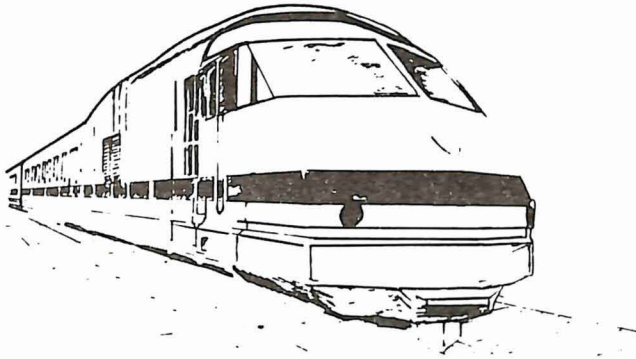


- service is quite flexible
- special services such as expresses can be readily set up
- can serve tourist and non-tourist trips equally well
- can be used to test the market for Corridor transit
- can form the first stage for virtually any longer range alternative

IMPROVED EXISTING RAIL



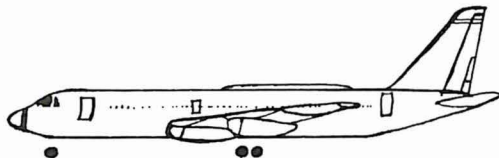
- service is less flexible than the bus but can be tailored to demand
- stations are located near or in major trip concentrations
- can build a good image for Corridor transit
- can be used to test the Corridor transit market
- can be the first stage of an advanced Corridor rail system
- can be an interim improvement during construction of the Higher Speed Rail Alternative
- is dependent on obtaining space on Seaboard Coast Line tracks



HIGHER SPEED RAIL

- can significantly improve Corridor transit at a fairly low cost
- is dependent on obtaining track space from the SCL
- is a logical intermediate stage toward a Very High Speed Rail system in the Corridor
- stations would be located in or near major trip concentrations throughout the entire Corridor
- could share tracks near Disney World with a compatible people-mover system

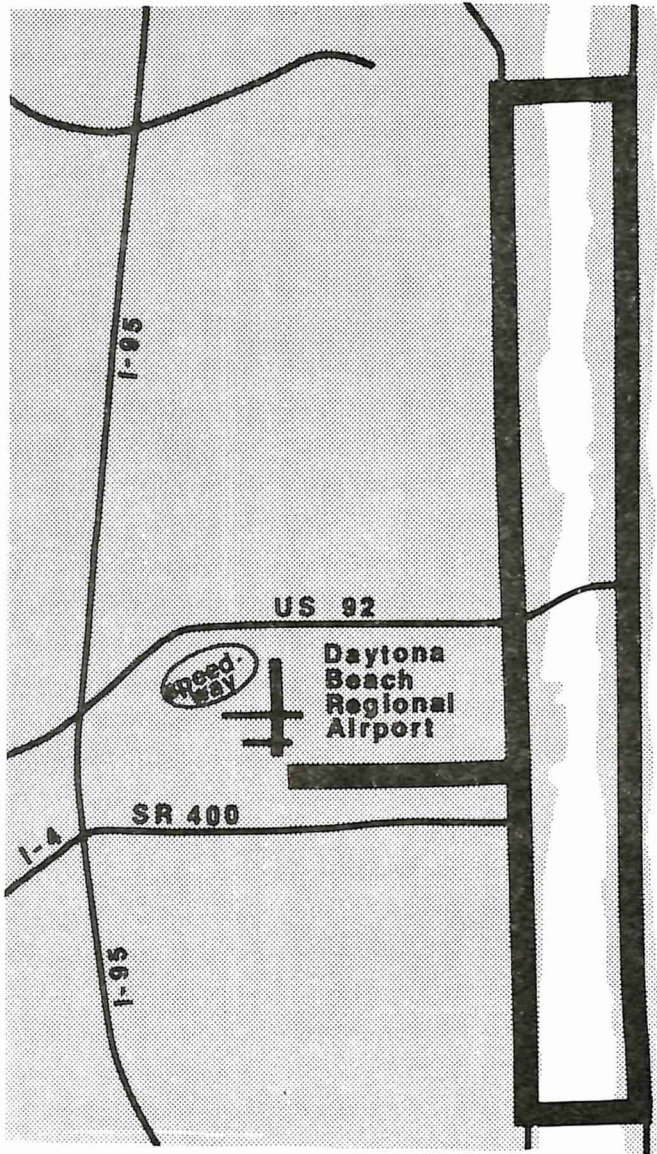
AIR



- cannot serve as many trip concentrations as the other three alternatives
- already has a good image
- routing and schedules can be flexible
- would not serve as many people as the other three alternatives
- can be used to test the Corridor transit market
- can form the first stage for virtually any longer range alternative

WHAT CAN BE DONE TO PROVIDE LOCAL ACCESS?

DAYTONA BEACH AREA LOCAL ACCESS SYSTEM



DAYTONA BEACH

The Daytona Beach people-mover, at present a planning concept, would link the beachfront hotel area with the airport and other major travel generators. As planning for this people-mover system advances, some clear implications for Cross Florida transit systems will emerge:

- The people-mover terminal at the Airport area would serve as the eastern terminal of any Cross Florida Corridor system. With joint transfer at this point, good local distribution would be provided in the Daytona area. The need for penetrating the built-up areas of Daytona Beach with the Cross Florida system would be eliminated.
- Transit equipment could be developed to serve both local and long distance travel with a single "family" of vehicles, with many common elements of design, operation and hardware.

TAMPA BAY REGION LOCAL TRANSIT CORRIDORS



■ INITIAL CORRIDOR
 FUTURE CORRIDORS

TAMPA BAY REGION

Long range transit development in the Tampa Bay region will eventually provide an integrated local access system which would connect to a Cross Florida system. Long range alternatives are currently under study and have not yet been firmly established. It is likely that the long range alternatives that emerge from this process will be based on (1) a major east-west Corridor through Tampa, (2) a Bay crossing and (3) a major north-south spine in Pinellas County.

As long range planning for transit in the Tampa Bay region advances, some clear implications for Cross Florida transit systems will emerge:

- Terminal locations -- points where the Cross Florida system will interface with the Tampa Bay transit system
- Shared facilities -- Opportunities for the joint use of right-of-way and stations by both a Tampa Bay transit system and Cross Florida intercity system
- Common technology -- Opportunities for use of a compatible "family" of equipment for both the Cross Florida and Tampa Bay transit systems

ORLANDO JETPORT - WALT DISNEY WORLD AREA

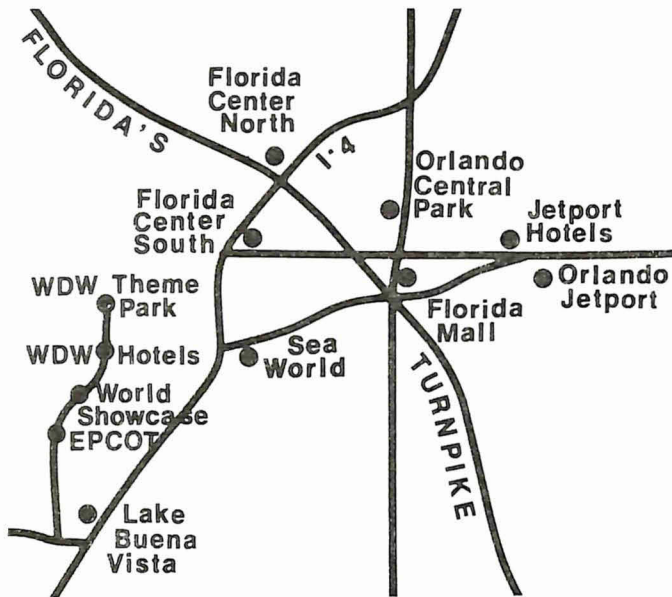
A special access system connecting Orlando Jetport and Walt Disney World has been considered intermittently since the two facilities were opened.

Travel in the area will continue to grow rapidly. Prime factors are expansion of Walt Disney World attendance by more than 100 percent by 1985, airport expansion, possible commencement of international air operations at the Jetport and substantial growth in commercial and residential activities throughout the area. The character of travel will also change significantly, with a sharp increase in the number of visitors arriving in the area by means other than the private automobile.

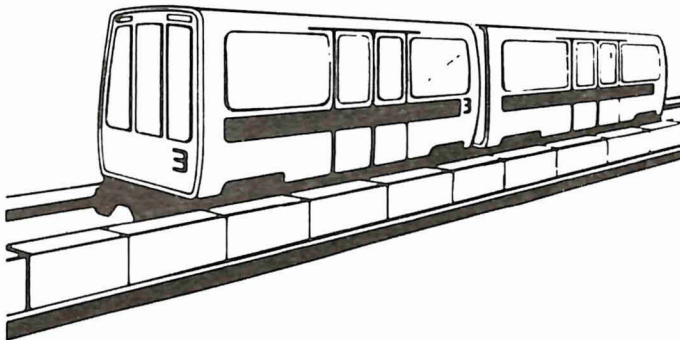
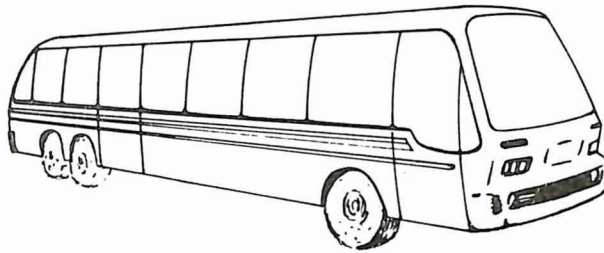
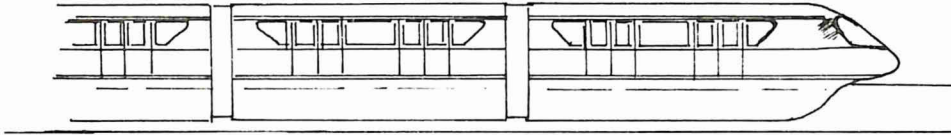
Two locations are considered for a Walt Disney World-Jetport system:

- Northern alignment, following SR 528 and serving the Florida Center area directly
- Southern alignment, passing through the undeveloped area approximately five miles south of SR 528

The northern alignment is preferred because of its service to existing travel generators.



Three basic equipment options for Walt Disney World-Jetport service are considered:



- Walt Disney World Monorail, already in operation in Walt Disney World. Additional monorail lines are planned as part of the imminent expansion of Walt Disney World. Advantages of monorail equipment are its current successful use and the continuity with existing monorail operations in Walt Disney World. A major disadvantage is the difficulty in adding branch lines or extending service to the entire Cross Florida Corridor.
- Bus Equipment, similar to that already partially serving the Jetport - Walt Disney World Corridor. Advantages of bus are low initial cost and fast implementation. A major disadvantage of the bus is its persistent image problem.
- Light Guideway, this class of equipment can operate on a variety of fixed guideways, including standard gauge rail. Vehicle capacity ranges from 20 to 60 seated passengers. Lightweight vehicles permit use of guideway structures substantially lighter than those required for conventional transit vehicles. Advantages of light guideway equipment are improved service, flexibility to permit future expansion and potential for extension to Corridor-wide service. Disadvantages are high initial costs and the risks inherent in using a new technology.

A special access system between Walt Disney World and Orlando Jetport has important implications for development of Cross Florida Transit:

- Special access could be feasible financially, an opportunity rarely occurring anywhere and one which should be carefully exploited.
- Special access in this area is an essential feeder service to any Corridor-wide transit development.
- The program of transportation improvements required for the imminent rapid growth in this area affords the opportunity for integrated transit planning.
- Depending on the equipment selected, a Walt Disney World - Jetport system could be the first link of a Cross Florida transit system.

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